Grace Garlatti 7th Grade Math

**July 12, 2010**

**“When Are We Going to Use This???”**

**Objective(s):**

Students will be able to identify ways in which algebra could be used in their lives.

Students will be able to explain a way in which algebra can play a part in a future career path.

**Set Induction:**

The teacher will ask the students to list any career in which they believe algebra is used. She will record the students’ answers on the board and make sure to ask why they believe algebra could be used in that profession. The teacher will ask the class to raise their hand if they think they will use math in their career when they are older.

**Learning Activities:**

*Video:*

The teacher will show the video, *Algebra: In Simplest Terms*,to the class. This video explains how algebra is used for solving real-world problems and clearly explains concepts that may baffle many students. Graphic illustrations and on-location examples help students connect mathematics to daily life (Chedd-Angier, 1991).

*Discussion:*

The class will discuss what they saw in the video. The teacher will ask the students if they were aware of the many different ways in which algebra could be used. The teacher will go around the room and make sure each student vocalizes one thing they learned or something they found interesting in the video. (Each student’s answer must be unique.)

*Timeline:*

*Set Induction*: 10 minutes

Video: 20 minutes

Discussion: 10 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will yet again ask the class if they think that they will use algebra in the future. The teacher expects more students to answer ‘yes’ after watching the video.

**Assessment:**

The teacher will collect the students’ homework after it has been completed and check to see if they could come up with an example as to how they might use algebra in a future career that interests them.

**Homework:**

The teacher will assign “Mathematical Profession” Paragraph

**Materials:**

Chalk

Chalkboard

SmartBoard

[http://www.learner.org/resources/series66.html?pop=yes&pid=165#](http://www.learner.org/resources/series66.html?pop=yes&pid=165)

Name:­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

“Mathematical Profession”

Write a paragraph describing a possible job you would like to have in the future that would require the use of algebra in some way, shape, or form. You need not be specific about the exact algebra you would have to perform, but make sure to explain what you believe algebra could be used for and why knowing algebra would be important to know in this profession.

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Grace Garlatti 7th Grade Math

**July 13, 2010**

**“Words -> Expressions”**

**Objective(s):**

Students will be able to translate words into algebraic expressions.

Students will be able to match algebraic expressions to the words that describe them.

**Set Induction:**

The teacher will write the expressions n+7, t/9, and 18-x on the board. She will ask the students to explain what each expression means in their own words. The teacher will then explain that algebraic expressions are used to express quantities in which one number is unknown (a variable is used).

**Learning Activities:**

*Introduction/Words and Meanings:*

The teacher will distribute the “Translating Words into Algebraic Expressions” handout. She will explain that certain words are used to describe different operations in mathematical expressions. The class will go over the handout and see how words translate into expressions. After the class has gone over the words that match each mathematical operation, the teacher will tell the students to raise one finger if the word she exclaims implies addition (two for subtraction, three for multiplication, and four for division). The students will be allowed to refer to their handout before raise their fingers.

*Memory:*

The teacher will split the students up into pairs and give each set of partners a stack of cards with algebraic expressions in words and a stack of numerical algebraic expressions. The students will be told to place all of the cards down on the desk (face down and at random). The teacher will explain that the students will be playing a memory game in which they have to match the algebraic expression in words to its numerical algebraic expression. If the cards the student picks up on his or her turn is not a match, the cards must be place face down back on the table in the exact spot from which it was picked up. If the cards picked are a match the student will be given the chance to take another turn. The students will alternate turns until all of the matches have been found.

*Design Your Own:*

Each student will be given the time to create three of their own algebraic expressions in words. The students will then trade their expressions with a partner and translate their partners words into numerical expressions.

*Timeline:*

*Set Induction:* 5 minutes

*Introduction/Words and Meanings:* 10 minutes

*Memory:* 15 minutes

*Design Your Own:* 10 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will explain that algebraic expressions in words and numerical algebraic expressions mean the same thing; she will explain that letters and mathematical numbers and variables are all merely symbols used to explain an expression.

**Assessment:**

The teacher will collect homework and observe students responses during class. She will also walk about the room as the students work with partners to clear up any misconceptions.

**Homework:**

The teacher will assign the “Express Yourself! ☺” Worksheet.

**Materials:**

“Translating Words into Algebraic Expressions” Handout

Pencils

Paper

Chalk

Chalkboard

Memory Cards

“Express Yourself! ☺”

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Express Yourself!!! ☺

Translate the following statements into algebraic expressions. (Hint: Make sure to remember to use parentheses.)

    1. Subtract 2 from x; then add y.    
               2. Subtract the sum of 2 and y from x.    
               3. Divide 10 by 3; then multiply by 5.    
               4. Divide x by the product of 3 and z.    
               5. Multiply x by 3; then add y.    
               6. Add x and 3; then multiply by y.    
               7. Subtract the product of 5 and x from 7.    
               8. 5 more than the product of 3 and c.    
               9. 13 less than the quotient 5 divided by p.    
              10. 4 times the sum of 10 and x.

**Answer Key To Basic Algebra - Lesson 5**

               1.  x - 2 + y    
               2.  x - (2 + y)    
               3.  10/3 X 5    
               4.  x/3z    
               5.  3x + y    
               6.  (x + 3) y    
               7.  7 - 5x    
               8.  3c + 5    
               9.  5/p -13    
              10.  4(10 + x)

Grace Garlatti 7th Grade Math

**July 14, 2010**

**“Evaluating Expressions: Part 1”**

**Objective(s):**

Students will be able to define terms associated with evaluating algebraic expressions.

Students will be able to evaluate algebraic expressions.

**Set Induction:**

The teacher will write the expressions k+5, 9-y, and 15/w on the board. She will ask the students if there are ‘answers’ to any of the expressions on the board. If the students say yes, she will ask them to explain their answers. If the students say no, she will write k=7, y=4, and w=3 on the board and ask the same question.

**Learning Activities:**

*Class Work:*

The teacher will review the “Algebraic Expressions” Handout. She will then do many examples of evaluating expressions with the class on the board. She will use the expressions y+6 (y=2, 8, 12), 6m (m=5, 9, 10), t/8 (t=32, 48, 80), and r-14 (r= -1, 14, 18, 22). The teacher will call on student volunteers to answer the questions she poses.

*Bag Game*:

The teacher will have a bag of algebraic expressions and a bag of possible variable values. She will have students come forward and choose a slip of paper from each bag. The student will be asked to evaluate that expression on the board using the value they selected from the bad. Two values will be used to evaluate each expression.

*Creation Time:*

The students will be given the opportunity to create their own expressions and list three possible values for the variable. The students will trade their creations with a partner and evaluate their classmate’s expressions.

*Timeline:*

*Set Induction*: 5 minutes

*Class work:* 10 minutes

*Bag Game:* 15 minutes

*Creation Time:* 10 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will remind the students to pay attention to the positive and negative signs when evaluation expressions. She will then pose the expression x-8 (x= -15, 1, 6) to the class to make sure they are taking notice of the signs.

**Assessment:**

The teacher will collect homework and monitor the students as they are working.

**Homework:**

The teacher will assign the “Variable Vocabulary” Worksheet.

**Materials:**

“Algebraic Expressions” Handout

Chalk

Chalkboard

Bags

Expression and Value Slips

Paper

Pencils

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Variable Vocabulary!

Define the following terms in your own words. (Hint: Use the ‘Algebraic Expressions’ Handout.)

**Terms:**

**Variable Term:**

**Constant Term:**

**Coefficient:**

**Variable:**

Evaluate the following expressions.

1.)x+15 for x=3

2.)y-12 for y= 5

3.) 14w for w=10

4.) 144/t for t=12

Grace Garlatti 7th Grade Math

**July 15, 2010**

**“Evaluating Expressions: Part 2”**

**Objective(s):**

Students will be able to evaluate algebraic expressions that use more than one variable.

**Set Induction:**

The teacher will write the expression 2+xy on the board and ask the class if this is an algebraic expression. If they class says no, she will ask them why not. If the class says yes she will write x=2 and y=7 on the board and ask the class to evaluate the expression.

**Learning Activities:**

***Class Work:***

The teacher will review the order of operations (PEMDAS) with the class.

She will then write the following algebraic expressions on the board:

*h**j**j**h*; use *h*, and *j*

*qp**q**p*; use *p*, and *q*

*m**n**m*; use *m*, and *n*

The class will evaluate these equations as a whole.

The teacher will then give a brief explanation of exponents to the class and then the class will evaluate the following expressions:

*p**-m*; use *m*, and *p*

*b**a*; use *a*, and *b*

***Partner Race:***

The teacher will call two students up to the board and read an expression allowed. She will then ask one of the students to supply values for the variable. The two students will write the expression on the board and try to evaluate the expression quicker than their partner does.

*Timeline:*

*Set Induction*: 5 minutes

*Classwork:* 17 minutes

*Partner Race:* 18 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will have the whole class evaluate an expression in their binders and the first student to raise his or her hand with a correct answer will be given a prize.

**Assessment:**

The teacher will collect homework and take note of student participation throughout class.

**Homework:**

The teacher will assign the “Evaluating Variable Expressions” Worksheet.

**Materials:**

Pencils

Pens

Chalk

Chalkboard

“Evaluating Variable Expressions” Worksheet

Grace Garlatti 7th Grade Math

**July 16, 2010**

**“Algebraic Baseball”**

**Objective(s):**

Students will be able to evaluate expressions by substituting values for variables.

Students will be able to apply the order of operations to a real life situation involving the use of algebra.

**Set Induction:**

The teacher will ask the students if they think algebra can be used in relation to sports. The class will discuss the answers the students give. The teacher will explain that algebra is very useful in scoring sports, especially baseball.

**Learning Activities:**

*Video:*

The teacher will have the students view the video <http://www.thefutureschannel.com/dockets/algebra/ballpark/>. The video follows a sports writer who explains how she uses algebra when she needs to incorporate statistics into her sports articles.

*Explanation:*

The teacher will hand out the “Batting Average” activity (See Activity Attached). The class will compute Jackie’s average as a class and also find the number of hits (K) she has made. The class will then break up into groups of two.

*Batting Average Activity:*

The class will work with their partner to complete the “Batting Average” activity. After each group has filled in the chart, the class will review the answers as a whole. The teacher will go over any question that the students need assistance with.

*Timeline:*

*Set Induction*: 5 minutes

*Video*: 7 minutes

*Explanation*: 8 minutes

*Batting Average Activity*: 20 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will ask the students if they better see how algebra can relate to things they enjoy doing in their daily lives.

**Assessment:**

The teacher will collect homework and travel about the room as the students participate in the Batting Average Activity.

**Homework:**

Friday! =)

**Materials:**

Pencils

Paper

Chalk

Chalkboard

Batting Average Activity

<http://www.thefutureschannel.com/dockets/algebra/ballpark/>

Grace Garlatti 8th Grade Math

**July 12, 2010**

**“Algebraic Baseball”**

**Objective(s):**

Students will be able to evaluate expressions by substituting values for variables.

Students will be able to apply the order of operations to a real life situation involving the use of algebra.

**Set Induction:**

The teacher will ask the students if they think algebra can be used in relation to sports. The class will discuss the answers the students give. The teacher will explain that algebra is very useful in scoring sports, especially baseball.

**Learning Activities:**

*Video:*

The teacher will have the students view the video <http://www.thefutureschannel.com/dockets/algebra/ballpark/>. The video follows a sports writer who explains how she uses algebra when she needs to incorporate statistics into her sports articles.

*Explanation:*

The teacher will hand out the “Batting Average” activity (See Activity Attached). The class will compute Jackie’s average as a class and also find the number of hits (K) she has made. The class will then break up into groups of two.

*Batting Average Activity:*

The class will work with their partner to complete the “Batting Average” activity. After each group has filled in the chart, the class will review the answers as a whole. The teacher will go over any question that the students need assistance with.

*Timeline:*

*Set Induction*: 5 minutes

*Video*: 7 minutes

*Explanation*: 8 minutes

*Batting Average Activity*: 20 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will ask the students if they better see how algebra can relate to things they enjoy doing in their daily lives.

**Assessment:**

The teacher will collect homework and travel about the room as the students participate in the Batting Average Activity.

**Homework:**

The teacher will assign the “Real World: Algebra” Worksheet.

**Materials:**

Pencils

Paper

Chalk

Chalkboard

Batting Average Activity

<http://www.thefutureschannel.com/dockets/algebra/ballpark/>

Name:­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

“Real World: Algebra”

Write a paragraph describing a possible job you would like to have in the future that would require the use of algebra in some way, shape, or form. You need not be specific about the exact algebra you would have to perform, but make sure to explain what you believe algebra could be used for and why knowing algebra would be important to know in this profession.

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Grace Garlatti 8th Grade Math

**July 13, 2010**

**“Coordinate Planes”**

**Objective(s):**

Students will be able to locate the x-axis and y-axis.

Students will be able to label the x-axis and y-axis.

Students will be able to plot points on a coordinate plane.

Students will be able to label points on a coordinate plane.

**Set Induction:**

The teacher will have a coordinate plane up on the SmartBoard. She will explain to the students that the x-axis is the horizontal line and it get labeled like a number line. A student will be asked to come label the x-axis. The teacher will explain that the y-axis is the vertical line and that this is also labeled like number line. A student will be asked to come up and label the y-axis.

**Learning Activities:**

*Trace the Teacher:*

The teacher will explain where the ordered pairs (2, 4), (-2, 4), (2, -4), and (-2,-4) are located on the coordinate plane and the quadrants in which they are located. The teacher will stand in front of the SmartBoard so her shadow projects onto the screen. She will call on student to plot a point on the SmartBoard along the border of her shadow and write the ordered pair of their dot on the board. They will also need to tell the class what quadrant that point is located in. This will continue until there is an outline of the teacher on the SmartBoard.

*Trace Your Hand:*

The students will draw a coordinate plan on a piece of graph paper and then outline their hand. The students will plot points around the border of their hand and label these points with a letter and ordered pair.

*Timeline:*

*Set Induction*: 5 minutes

Trace the Teacher: 20 minutes

Trace Your Hand: 15 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will have each students announce the point at which the tip of their thumb is located and that student will call upon another student to locate that point on the SmartBoard.

**Assessment:**

The teacher will observe student work and participation during class.

**Homework:**

The teacher will assign the “Ordered Pairs” Worksheet.

**Materials:**

SmartBoard

Pencils

Paper

Graph Paper

Grace Garlatti 8th Grade Math

**July 14, 2010**

**“BattleShip…or is it BattleGraph?!?!?”**

**Objective(s):**

Students will be able to able to apply what they have learned about the coordinate plane to the ga

**Set Induction:**

The teacher will have the “BattleGraph” PowerPoint (See Attached) displayed on the SmartBoard and will read the “Report to Your Battle Stations” slide aloud.

**Learning Activities:**

*Explanation:*

The teacher will walk the students through the directs to the “BattleGraph” game via the PowerPoint presentations (See Attached). She will answer any questions students may have regarding the game.

*Design Mathematical Ocean:*

The students will be given time to construct their “Mathematical Ocean” (See Attached). The teacher will advise them to place their ships strategically.

*Play Game:*

The students will play the game following the rules on the PowerPoint (See Attached).

*Timeline:*

*Set Induction*: 5 minutes

*Explanation:* 5 minutes

*Design Mathematical Ocean:* 10 mintues

*Play Game:* 20 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will award prized to the winner of each partnership (or the player who got the most hits).

**Assessment:**

The teachers will observe the students during class.

**Homework:**

The students will design a new mathematical ocean labeling all of the points they include.

**Materials:**

“BattleGraph” PowerPoint

Mathamatical Oceans

SmartBoard

Pencils

Grace Garlatti 8th Grade Math

**July 15, 2010**

**“Y=MX=B INTRODUCTION!”**

**Objective(s):**

Students will be able to graph equations using t-tables.

**Set Induction:**

The teacher will write the equation y=mx+b on the board and ask if anyone know what that means. She will then explain that y=y coordinate, m=slope, x=x coordinate, and b=y-intercept. She will explain that they will be mainly working with finding the coordinate today. She will also tell the class that y=mx+b is the equation for a straight line.

**Learning Activities:**

*SmartBoard Work:*

The teacher will write the equation y=4x-2 on the board. She will also write a t-table with the points x=-6, -5, -4, and 4. She will ask the students to fill find the values for y. After the students have completed the t-table, the teacher will call on four different students to come to the SmartBoard and plot these points on the coordinate plane that is displayed. The students will see that these points form a straight line.

*Partner Work:*

The students will work with a partner to complete the “Graphing Linear Equations” worksheet. The teacher will move about the room assisting any students who have questions or need some help.

*Share Time***:**

The teacher will have the worksheet displayed on the SmartBoard. Each pair of students will be called up to fil their answers in on the correct coordinate plane. The class will discuss the answers and make corrections to falsities and misconceptions.

*Timeline:*

*Set Induction*: 5 minutes

*SmartBoard Work:* 10 minutes

*Partner Work:* 15 minutes

*Share Time:* 10 minutes

*Closure*: 5 minutes

**Closure:**

The teacher will write y=mx+b on the board and as the students what the value of x is is b=123. This will solidify the idea that x=0 at the y-intercept.

**Assessment:**

The collect homework and monitor students progress during class.

**Homework:**

The teacher will assign the “Graphing Linear Equations” Worksheet.

**Materials:**

Pencils

Paper

Chalk

Chalkboard

SmartBoard

“Graphing Linear Equations” Worksheet (2)

Grace Garlatti 8th Grade Math

**July 16, 2010**

**All 8th Grade Works Together!**

**See Patty’s Plan!**